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Assessment of Work Stress Influence on Work Productivity in Romanian Companies

Viorica Petreanu^a, Raluca Iordache^{a*}, Mihaela Seracin^a

^a*The National Research and Development Institute for Occupational Safety and Health, Bucharest, 061692, Romania*

Abstract

This paper presents the methodologies and results recorded in a documentary/field study concerning work related stress and its effects on work productivity.

The project had as its main aim the elaboration of an instrumental pattern for the assessment of stress influence on work productivity, based on the investigation of the work stress as well as the diagnosis of its occurrence in the companies of the Romanian economic environment.

The methods involved: the provision of a scientific theoretical and methodological base, which could catch and include as many aspects of stress as possible and especially their correlation to the indicators of work productivity (e.g. review various policies and actions aiming at reducing the effects of stress at the work place recommended by institutions with duties in the area; strategies adopted by international companies and European ones); elaboration of a set of hypotheses and investigation criteria of the stress at work and assessment of its effects on the modification of indicators on work productivity; the elaboration of the investigation methodology (hypothesis to approach the inquiry at national level: definition of the investigation area, the variables/indicators necessary to draw up the questionnaires).

Work stress was tackled as a component of the present stress phenomenon inside the society and, at organizational level, as cumulus of the individual stress reactions as responses to the job and extra-job stress factors.

The findings represented the base from which the elaboration of the assessment system of stress influence on work productivity in the companies of the Romanian economic environment started, as an operational instrument for employers to integrate occupational stress management in the general undertaking to prevent occupational risks with obvious benefits both on workers' health and performance and also on company's health and proficiency.

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Corresponding author. Phone.: +40-21-315-17-24; fax: +40-21-315-78-22.

E-mail address: iorraluca@yahoo.com, vioricapetreanu@yahoo.com

1. Introduction

Preventing stress, which affects 22% of the EU-27 employees (European Foundation for the Improvement of Living and Working Conditions, 2005), represents one of the objectives stated in the European Commission Message on the strategy in the safety and health at work (EC, 2007). At European level, the occupational stress represents the second work related health problem, after the musculoskeletal disorders (European Foundation for the Improvement of Living and Working Conditions, 2005).

The costs of the stress at work are reflected both on the persons and organizations and go beyond them, up to the level of the society at large. At the individual level, stress can have negative effects on the workers' health state (Cohen, Kessler & Gordon, 1997; Cox, Griffiths & Rial-Gonzalez, 2000; Cox & Griffiths, 2010), as well as reduced performance (Cox & Griffiths, 2010; Stajkovic & Luthans, 1998), lack of career opportunities and even danger of losing the job (Cox & Griffiths, 2010). In more severe cases, stress can lead to depression disorders (Tennant, 2001; Netterstrøm *et al*, 2008). For the company or organization, the costs of stress can have various forms, such as: absenteeism (Houtman, Kornitzer *et al*, 1999), expenses with workers' health and personnel turnover (Griffith, Hom & Gaertner, 2000) that is, costs with recruiting and training the workforce, risky behaviours (Siegrist & Rödel, 2006) etc. Furthermore, in recent years an alarm has been drawn on the productivity and efficiency loss generated by work stress (Cooper, Dewe & O'Driscoll, 2001). For the society, work stress can lead to higher pressure on society and social security services, especially if the problems are getting worse and result in a job loss and unemployment or retirement for health reasons.

This project, developed during 3 years, had as its main objective the development of an assessment instrument of stress influence on work productivity, based on the investigation of the work related stress as well as the diagnosis of its occurrence in the companies of the Romanian economic environment.

2. Methods

The methods involved: the provision of a scientific theoretical and methodological base, which could catch and include as many aspects of stress as possible and especially their correlation to the indicators of work productivity (e.g. review various policies and actions aiming at reducing the effects of stress at the work place recommended by institutions with duties in the area; strategies adopted by international and European companies); the elaboration of a set of hypotheses and investigation criteria of work related stress and assessment of its effects on the modification of indicators on work productivity; the elaboration of the investigation methodology.

The study was developed during three years, involving five stages.

In the first and second stages, the objective was to provide a scientific theoretical and methodological base. A wide variety of documents on work related stress, including analysis and reports at international, European and national levels were studied as well as the results of some researches targeting the occupational stress and risk psychosocial factors.

The objectives of the third stage consisted in: the exploration of the most exposed occupational situations at the high risk of stress, identification of stress risk factors in companies of Romanian economic environment, analysis of the interface of occupational stress as employment quality indicator and work productivity indicator.

The objective of the fourth stage of the project was the elaboration of the investigation methodology (beginning the survey at national level: define the investigation area, the variables/indicators necessary to draw up the questionnaires).

Exhaustive lists containing social protection indicators, productivity indexes (reported by Romanian companies and included in National Statistic Institute annual reports) and lists containing social and sociological indicators were settled in order to objectively measure the influence of stress factors on work productivity.

For analyzing work efficiency the following indicators were used: work productivity; profit per employee. Work productivity was considered as representing the work factor capacity to create a certain volume of services/goods in a certain period of time; in other words, an efficient outlay of a specific work quantity. The level of work productivity was expressed in the quantity of products obtained in a certain time unit or the work outlay per product unity. Work productivity indexes were considered in two main categories: natural and value indexes. Natural indexes reflect the number of physical units relative to the work time units. Value indexes take into account the whole production realized from a specific company level to the national economy level. These indicators were monitored as variables in surveys on employees and employers.

A pre-survey to validate the interview guide and the questionnaire was developed. This represented the base for an inductive methodology to settle the hypotheses of the survey.

The objective of the project fifth final stage was the elaboration of the assessment system of stress influence on work productivity in companies of Romanian economic environment.

Investigation among employees was achieved by domiciliary face-to-face interviews. The selection was made randomly according standardized methodologies, starting from certain points defined in the instructions for sampling and observing a statistical step of choice.

The sample was of 1000 participants. It was a two-staged probabilistic sample, nationally representative for the Romanian employed population. Tolerated error is $\pm 3.1\%$ at a 95% probability. Stratification criteria were the employment structure by the size of the cities, residence (urban, rural) and historic region (7 regions and Bucharest). Area of investigation included 94 points in 88 sampling locations (46 in urban and 42 rural) in 41 counties and Bucharest.

Identification data (county, city, address, name, phone) of the participants were recorded by interviewers in the sample files, based on which the control was achieved of how they met the selection criteria and the rigorous investigation. Control validated the accuracy of the information collected and enabled a database in SPSS software in which tests and statistical significance testing were performed. Statements of analysis and interpretation of the results were accompanied by the arguments of statistical significance comparing averages and proportions, and the correlation coefficients of the analyzed variables.

Investigation among employers was based on an interview guide, in 30 companies in the fields of Administration, Manufacturing, Retail, Healthcare, Education, Transports and Industry. These economic fields correspond to the specifications in the areas of risk analysis documentation on occupational stress and occupational stress criterion incidence resulting from the analysis database on employees. Interviews formed the base of case analyzes that met the needs of case studies and methodologies for qualitative analysis of interviews.

The questionnaires contained detailed items relative to every indicator in order to allow primary and secondary comparative analyses between companies, activity domains and social-economic occupational situations, to quantitatively and qualitatively emphasize the eventual impact of stress on productivity.

Indicators used in the investigation instruments: a) for employees: extra-professional issues (major stressful life events, relational problems and financial problems); professional and organization related issues (work demands, control degree at work, job safety, social climate, social support, professional development); work-life balance; b) for employers: dysfunction indexes at organization level, organisational and managerial indexes; c) measuring stress influence on work productivity.

3. Results

The main results of the first and second stages consisted in: a review of various policies and actions aiming at reducing the effects of stress at the work place recommended by institutions with duties in the area; strategies of international companies and European ones respectively, and the elaboration of a first set of hypotheses and investigation criteria of the occupational stress and assess its effects on the indicators of work productivity.

It was concluded that the study of occupational stress should be developed by a multidisciplinary approach including: psychology, sociology, biology/medicine, ergonomics, management, legislation.

Factors determining occupational stress were included in a data base containing both the objective system/work situation stressing factors (accident risks, workload, work demands, work conditions, etc.) and the extra-professional ones referring to family and social life – and the subjective ones – registered as opinions and self assessment of risk, workload, work demands, social environment, health state etc. On the other hand, the data base had to cover indicators that can express the stress state (diseases and duration of medical leave, absenteeism, work accidents, work conflicts, dismissals, etc.).

The results of the third stage referred to: a study that defined the multidimensional impact of dysfunctions the companies were facing with; data bases containing occupational situations having a high risk exposure; company profiles (industry, size, activity, property form, etc.).

The methodology of assessing the stress influence on work productivity in organizations of the Romanian economic environment took into account a number of hypotheses. The hypotheses referred to the criteria of designing and implementing the system, possibility of selecting the most representative elements to reveal the correlations between occupational stress and work productivity indicators, investigation covering area (part of the assessment system), specifically:

- health indicators revealed the interaction between the employee and his/her working environment. Indicators of the working environment were also taken into account, making reference to the quality of occupational life in the companies of Romanian economic environment, that were supposed to have suffered restructuring, updating, organization changes from the simplest to the most radical ones.

- occupational situations were deeply marked by changes in the world of work and society evolution, in which an important aspect was represented by work - life balance.

In the fifth stage the following activities were carried out: completing the relevant indicators to define work related stress and work productivity, as well as their correlation; methodological construction of the survey (questionnaires testing and validating, survey launching, collecting data, developing the data base); analyzing of the survey outputs.

Investigation performed among the employees highlighted the following results:

Insecurity of staff is induced by unemployment perspective: 39% of employees believe that investigated current job is uncertain, while 35% are afraid of losing their current job and 32% are willing to accept any difficulties/problems at work because they can not find another job. Contingency analysis of the answers given by subjects who can make judgments on these issues certify their logical relationship consistency: 82.1% of those who consider current job as insecure are the same ones who fear its loss. Profile of the persons insecure with the current job and also of those who fear its loss is accounted largely by employees of industry and commerce, women, people over 40 years old, people from the rural area with elementary education level (primary school, secondary school, level I, vocational school). These are also the ones who have the lowest incomes per household member reported. Rational fear of job loss is mainly represented by those who express this concern, the closing / bankruptcy of the firms (44.2% of participants), layoffs/restructuring (43.8%) and to a lower extent for other reasons, such as age or health state (3%), high competition for the job (2.6%), fixed-term contracts (2.3%) or other conditions related to the fact the respondent is a commuter or large family to represent an additional reason to keep their job.

Insecurity is exacerbated by unsatisfactory relation between self-perception of needs and income level. Two thirds of the investigated employees appreciate the income they get is not enough for basic needs (24.3%) or get only the basic necessities (42.3%) and for a quarter of the participants it provide a decent living level (25.7%). This could explain some motivations on satisfaction offered by current job, such as: for 30.4% of the participants, job is the mean of subsistence, while 7.9% reported they have no reason for current job satisfaction. There are no statistically significant links between these assessments and the actual workplace of the respondent or its tenure in at the workplace. This situation can be put either on account of any indebtedness of the respondents from banks (loans, returned rates). In respect to this, the analysis did not reveal any statistically significant link between having a credit or not and the extent to which income needs are satisfied.

Stress is assumed as being generated by the work characteristics, as follows: work correspondence with individual abilities, physical and mental is appreciated by 85% of the participants and in 14% cases the work performed is considered under the individual capacities (this last aspect is claimed by employees with over average and high education level, generally women); high work rhythm in most of the working time is claimed by employees in transports (61%), industry (57%) and constructions (57%); fixed duration of the working day is characteristic of most investigated fields, except constructions and transports; long working hours are reported by the employees in the construction industry (70%) and transports (56%); shift work is mentioned only by employees in the health field (60%); the physical workload is perceived as stressful by people working in constructions (84%), industry (67%), trade (54%) and transports (53%) and it is accused by men (57%) and those with low education level (71%); mental workload is reported in health professions (90%), education (90%), administration (90%) and transports (83%), especially by the employees with high (87%) and medium (70%) education level; work task monotony is reported only in 20% of analyzed areas without being given to any particular field; exposure to noise and vibrations is reported by the employees in constructions (81%), transports (69%) and industry (66%), especially by men (56%) and those with low education levels (57%); exposure to increased risk of accidents is characteristic to the transport professionals (64%) and constructions (62%); clarity of job demands emphasized the following hierarchical structure (share of positive answers): 88% in health sector, 85% in administration, 82% in industry, 81% in education, 79% in trade, 78% in transports and 52% in constructions sector.

As for the interpersonal relationships at the workplace, the analysis revealed higher rates of assessments pertaining to supervisors' non-stimulator behaviour towards the subordinates: tracing tasks that cannot be performed during normal working hours and lack of appreciation of the performance. Although common, these issues were not reported as leading to the creation of tensions in relations between employers and employees. Other issues perceived as belonging to injustice, discrimination and persecution are more strongly perceived and creates tensions in many cases (22%) raises the issue of quitting the job.

Self-perception of health: 79% of the participants consider themselves as being people in good health state. In the group who perceive themselves as less healthy or not healthy at all are more women than men and more people in the age group over 40 years. For 7.6% of the participants, the cause of the accused diseases was reported as related to the current job conditions. Most of those who attribute diseases to the working conditions are individuals in the age group 50 years and older.

The fifth stage was also concerned with defining and verifying the operating hypotheses of the assessment system of work related stress influence on work productivity and based on it, the assessment of stress impact within the work processes in the companies of Romanian economic environment on work productivity.

4. Discussion

In the last decades the world of work has passed through a number of significant changes that have caused new risks related to the workers' safety and health at work, social and economic costs at the organization and society at large level, the most important emerging risks being the psychosocial risk factors / stress at work factors, depending on the task design and work management and also the economic and social general work context which can lead to psychological, social or physical injuries.

The analysis of the present situation at the European and international level has revealed, among others, the necessity to improve the work quality and productivity, provide the safety and health at the work place, factors which are subordinated to the general objective of a competitive and dynamic economy –based on knowledge.

The diagnosis study of occupational stress represents a novelty in the Romanian psycho-social and occupational safety and health (OSH) investigation, involving a set of new instruments that take into consideration psychosocial, medical and economic issues.

In Romania, the national documentary materials on occupational stress provided minimal elements, coming from the conclusions of punctual studies which are not representative at national level. Most of the scientific documentation in use consists in the results of several studies developed in other countries. From this point of view, the present diagnosis of the issues implied by occupational stress reveals for the first time the extent of such phenomenon in Romania and opens the perspectives for developing and deepening the researches in this area.

The findings of the survey, as well as the data of the previous research stages represented the base from which the elaboration of the assessment system of stress influence on work productivity in the companies of Romanian economic environment started, as an operational instrument for employers to integrate occupational stress management in the general organizational management, with obvious benefits on employees' health, safety and performance and company's health and proficiency.

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